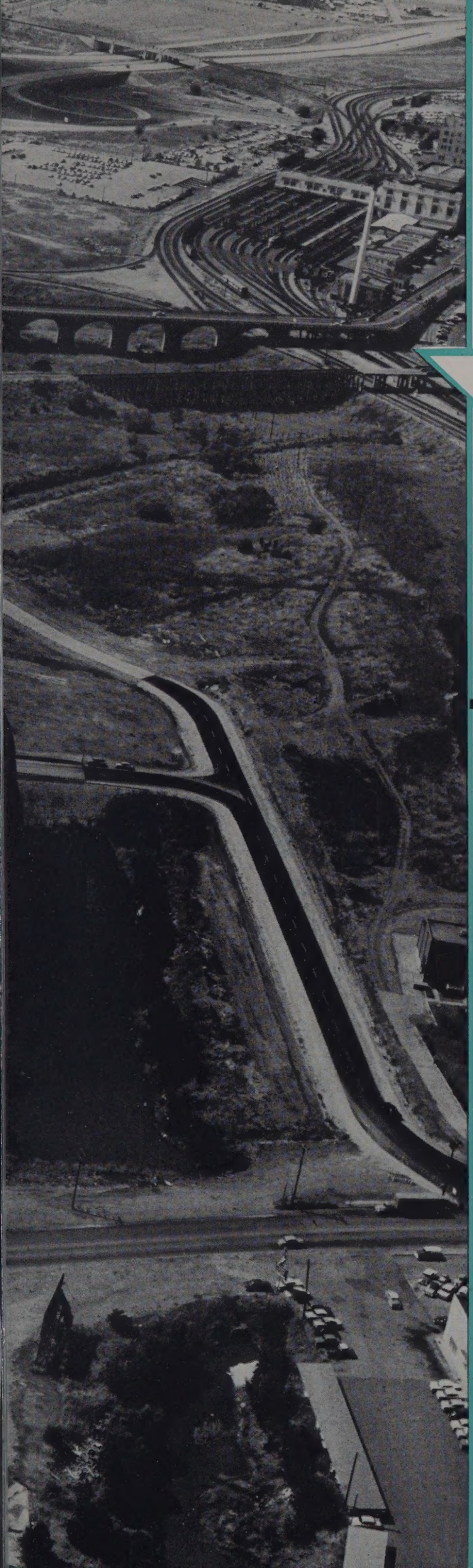
Texas Highways

December, 1959 35c



Texas Highways

Volume 6 • Number 12

December, 1959

Contents

A Day in the Life of a Right of Way Man	2
The Fire Ant	6
Preventive Maintenance	8
Bead Tank Improvement	9
Attack and Survival	10
Ceylon Road Building	15
That Mud Flap Problem	18
Laboratory Engineers Conference	20
Over the Highways	23

A Day in the Life of a

MORE and more we hear and read about right of way. Some of us know what right of way is, some think it is what we have when we are behind the wheel and the light is green. To better acquaint all of our readers with this ever-increasing Highway Department business, TEXAS HIGHWAYS plans to do a series of articles on the subject.

In the Highway Department, a Right of Way Division was established in October of 1956 with a Right of Way Engineer—A. H. Christian—and a secretary. Now, some three years later, the Division has grown to 100 employees and has moved to Camp Hubbard offices in Austin.

We start this month with a story of the right of way man—a day in his life. Selected as our target is Ed W. Couch, Chief District Right of Way Agent in Abilene. He has been doing right of way work for the three years the Highway Department has been in the right of way buying business, but has been with the Department for 33 years, all spent in Abilene.

What are the ingredients of a good right of way negotiator? Brains, tact, diplomacy, personality, integrity, honesty—and 523 other positive attributes listed in Webster. A background in engineering, law, and appraising comes in handy. He must also be a top-flight salesman, a good listener, and have an aptitude for getting along with people. The right of way man is the representative to the people of the Highway Department, therefore his job is also public relations. The good will he builds paves the way for cooperation in the Department's highway-building program. The job is not an easy one, but Ed Couch enjoys it.

His day begins, even as yours and mine, at 8 o'clock. It could be any day of the week, is sure to be a challenging one. Before Couch, or any right of way agent approaches a landowner, preliminary work must be done. Routes are surveyed, needs determined, maps are drawn showing right of way lines. The project is submitted for approval by the Bureau of Public Roads. Two fee appraisers submit an appraisal figure—all improvements considered. These operations are followed by submission of appraisal reports to the District Office for review and approval, then on to Right of Way Division in Austin.

When all preliminaries are out of the way, Couch makes sure that he is

prepared to answer any and all questions which might come up in the course of the day he has outlined ahead of time.

Property owners are often pleased with the prospects of selling a parcel of land for right of way, think the price offered is fair and are glad to get the highway facility and its advantages. Occasionally others, though displeased at the start, come around to this way of thinking after the project has been completed.

Couch's first stop is the office of Jimmy Partin, Abilene fee appraiser, to go over a knotty problem at hand. Partin is one of the more than 600 independent fee appraisers in the state.

Right of Way Man

Next on his agenda is an appointment with W. P. Wright. With complete preparation and information at his disposal, Couch goes into details with his buying-selling job and makes the one-price offer which has been established through the regular channel.

On this particular morning, Couch discusses parcels to be negotiated for with J. C. Roberts, District Engineer for District 8. They go over an aerial photograph of Interstate 20 with Couch pointing out trouble spots.

At the W. E. Horton home, Couch goes over the case with the entire family, answering the questions of all. He offers the predetermined price for their parcel of land—a necessary link in the proposed construction.

After a quick lunch along the way, Couch stops off to recheck right of way lines with a survey crew on the property of A. M. Hinds Sr. If there is any question in a landowner's mind on any point, a recheck is made.

Couch, armed with information, calls on landowner Hinds, going over the new project with him and telling Hinds how he will be affected by it. He also paves the way for the two fee appraisers visits by outlining for Hinds what they will be doing.

By midafternoon, the tireless Couch confers with a power-company official concerning a power line with its many huge poles located on land now needed for the Interstate System. He explains the process of removing and adjusting utility lines along the area.

Days come to an end—sometimes at 5 o'clock, sometimes much later. This is one of those overtime days. A landowner wants to be paid in a hurry for his property, so Couch works until he finishes all paper work necessary to take care of this task.

THE FIRE ANT

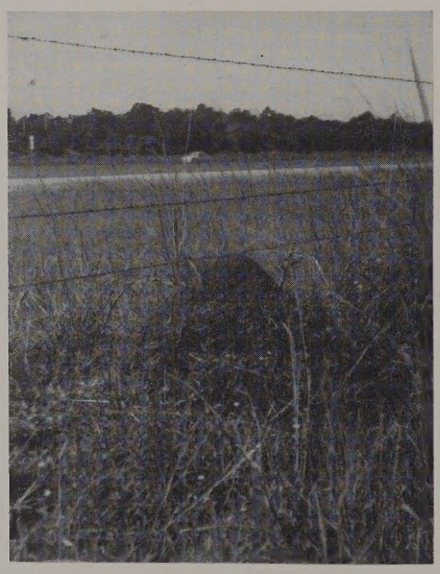
The fire ant is well known, not because he's a familiar sight but because of a low public-relations rating resulting from some unfavorable publicity he's had. Because the name tag "fire ant" has been in headlines so much, to many people every ant is a suspect fire ant, and every ant nest harbors them.

In certain districts of the Texas Highway Department fire ants and their mounds do exist, for sure. Men of the Department whose work brings them in familiar contact with whatever inhabits the right of way can unmistakably identify the species. The presence of fire ants doesn't always bring out the Department's chemical warfare weapons, though. It depends.

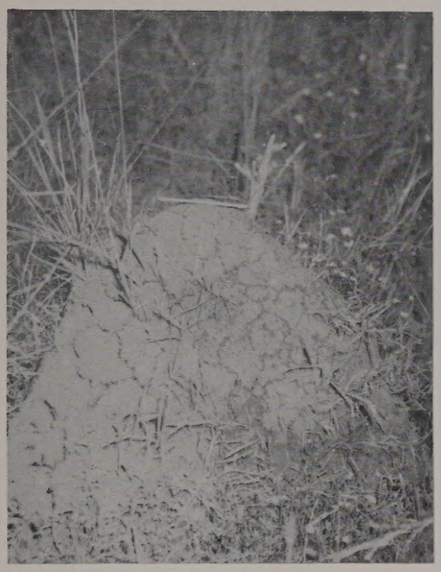
The Department doesn't pick on him simply because he's an ant. What it does deplore, however, is the fire ant's insistence on a special style of architecture and the site he often chooses to do his building. Fire-ant mounds rise above ground sometimes as much as two feet. Not uncommonly they are three feet in diameter. Like gray wens, sizable housing projects often swell up along the right of way. Grass and vegetation nearby will become dry and mangy because this ant has a taste for seeds, plants, and trees. An ideal setting for erosion is provided by the insect's feeding habits. This happens especially in Districts 12, 15, 18, and 20.

The fire ant, who shows a preference for clay in selecting the site for his home, erects an apartment house so sturdy its presence along the right of way could easily overturn an automobile. This dwelling is designed honeycomb fashion, and a winged queen inside is the center of community attention. Thousands of workers, attendant upon their egg-laying monarch, carry out the work of the colony beneath the hardened crust. From experience, maintenance men, cutting through the mounds with mowers, have found fire ants exceedingly hostile, active, and determined in the counterattack they stage upon humans who seek to rout them with nothing but the physical power of machinery. The common name applied to the species is descriptive of its means of fighting back. Its bite is like fire.

On two counts, then, the fire ant nesting on highway right of way does force the Texas Highway Department maintenance men to reach onto the warehouse shelf for a pesticide bottle: (1) If the ants have built in a spot which endangers the traveling public or undermines the roadbed and causes cavities; (2) if their construction lies in the path of the maintenance man and/or his machines.



A fire-ant colony may decide to establish residence beneath a crape myrtle shrub on the right of way (left) or it may decide to do its nesting on the right of way line under a fence (right). In some sections of District 20, where these pictures were taken, the only infestation of this insect is on highway property.



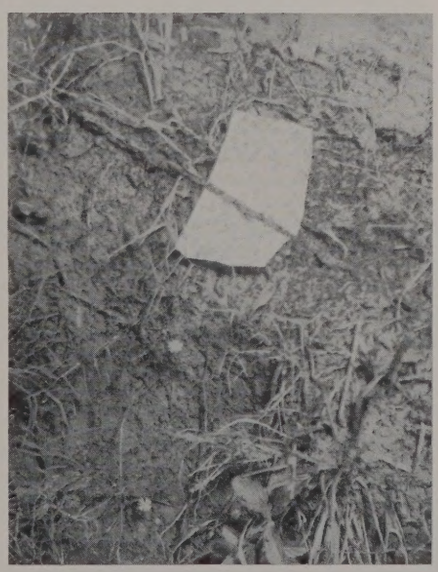
Close-up of a fire-ant dwelling on right of way in Jefferson County, north of Beaumont, shows the typical dome-shaped mound and the crusted exterior. Inside thousands of workers attend an egg-laying queen. This particular mound was sliced experimentally to observe the reaction of its inhabitants (see following pictures).

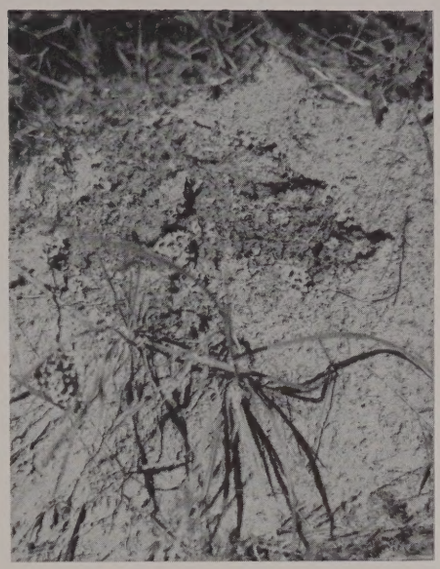
As far as fire ants and other insects of the right of way are concerned, the Department cooperates with the farmer in a most neighborly manner. This cooperation follows the private landowner's wishes. For instance, should he be treating his fields with a chemical sprayed from an airplane—by prescription of the United States Department of Agriculture—the policy of the Highway Department is to allow spraying of adjoining sections of the highways.

Sometimes it is the Department, not the farmer, who makes the necessary act of war against the ant. Each District decides the chemical to be used. Carbon tetrachloride, chlordane, deildrin, and heptachlor are compounds from which the Highway Department maintenance man has made his selection recently. Whatever the choice, however, the attack is staged on highway land only, and the chemical is applied to individual ant hills. Extensive area treatment is never conducted by the Department. The policy is, "Spot treatment only."

The fire ant, an importation from Argentina, has been in this country for 40 years, authorities say. The species was seen first in the bay-front area of Mobile, Alabama. Now all coastal states east of Texas have them. Beaumont District was the first of the Highway Department districts to use eradication chemicals against these insects on its right of way. That was in 1957. Houston District, adjoining Beaumont, has since added skirmishes with the fire ant to its maintenance duties. Positive measures have also been taken in Collin County (District 18) and Bexar County (District 15), which are widely separated from each other. A buffer of territory stretches between them and the Beaumont-Houston districts. Adding to the seeming unpredictability of the fire ants' next attempt at settling on highway land, Dallas County recently reported the presence of mounds.

After top of the mound was cut off, white paper was laid on the disturbed insects. The picture below shows them in angry turmoil, swarming over the paper and covering a weed stem laying across it.

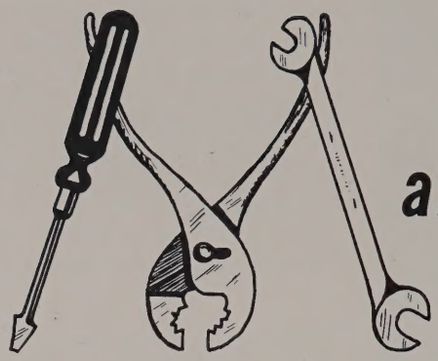




The honeycomb structure inside the nest may be seen in this view. Queens have been known to hitchhike on vehicles moving along the rights of way. Too, she will fly farther on right of way than through wooded areas, District 20 observers say.

Use of at least one chemical—heptachlor—recently became controversial, and the fight against the fire ant was thrown back into newspaper and magazine headlines. Conservation groups opposed its being sprayed over large areas from airplanes, maintaining that the pellets dropped killed beneficial wildlife. This reinforced the Highway Department's insistence on spot treatment, unless by allowing spray treatment the District would be cooperating with an adjoining landowner who was doing the same. It also brought attention to the variety of chemicals other than heptachlor with which the ant-fighting districts have had success.

reventive



aintenance

Yet another District is sending Mahomet to the mountain. In this particular instance the daily expedition is made in the interest of that mainstay of one of the busier Districts—its fleet of vehicles. Beaumont District now has a traveling equipment supervisor. In this, it follows the examples of Districts 2 and 12.

Elvie E. Busby, Equipment Supervisor, makes the rounds of the eight counties in District 20, trouble shooting, making equipment logs, and noting equipment which is due repairs. Tire inspection is included. If this highway circuit rider finds a vehicle in need of major attention, he prescribes for it a trip to the district shops. Lesser complaints are treated out in the field.

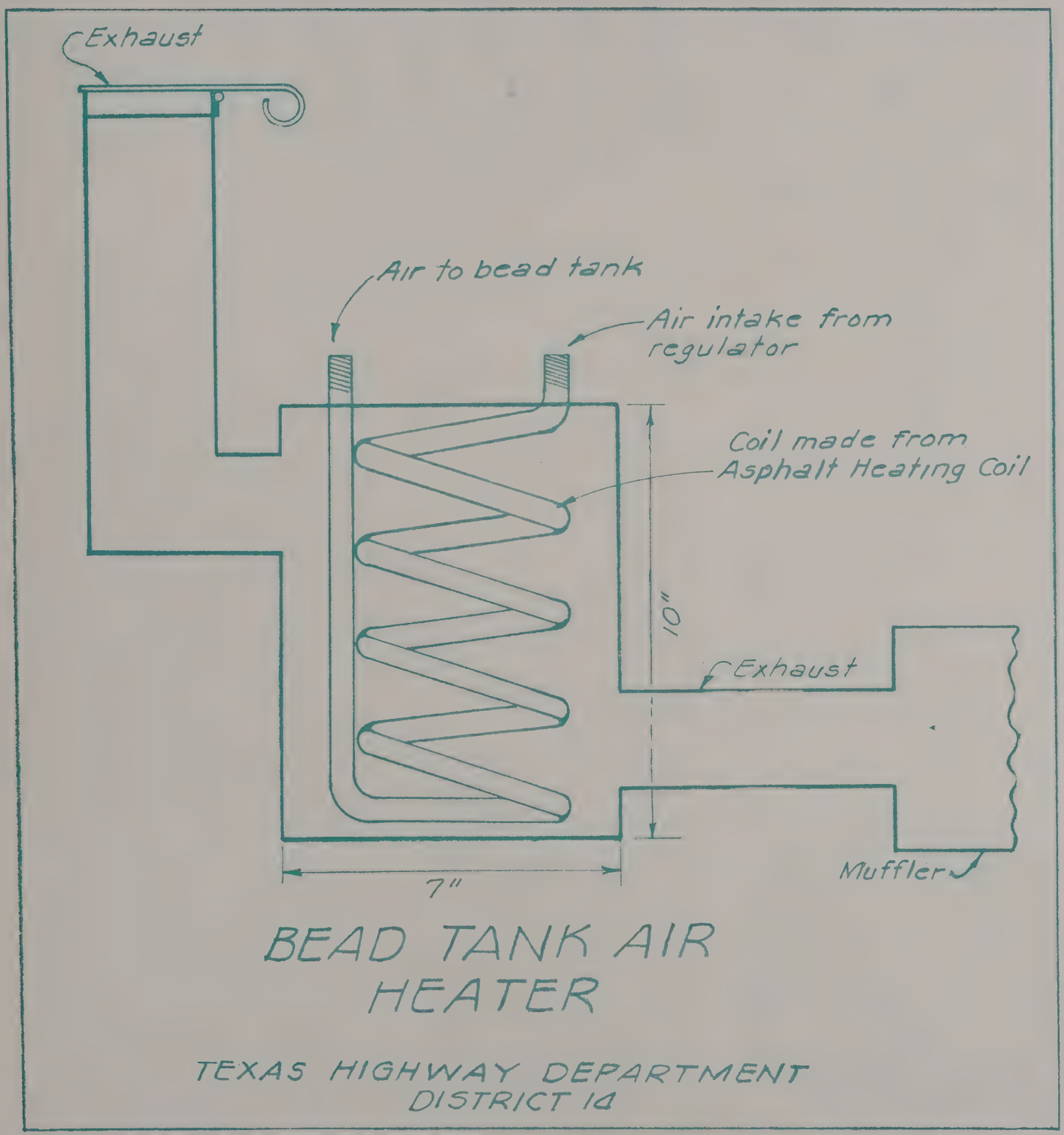
Senior Equipment Supervisor for the District, Hugh D. Hamm, says the addition of this position is a proven benefit, not only in time saved when actual repair work is performed closer to the job but also in the interest of preventive maintenance. Busby can catch vehicle ailments before they deteriorate into breakdowns.

Elvie E. Busby of District 20, right, is the answer one district has for down time. He is an Equipment Supervisor who doesn't stay put. Here Busby finishes a field tune-up job in Silsbee, several miles from the District shop. Dave Cravy, Skilled Laborer, assists. »

« ***Tire inspection is a regular part of the check Busby makes of the vehicles under his care. Here he is joined by Skilled Laborer Eitell F. Okun of the district headquarters service station in a check on tires which need repairs or recapping.***

Bead Tank Improvement

In District 14, Senior Equipment Supervisor J. K. Nash used a coil from an asphalt heater burner to improve the bead tank on the Wald center-stripe machine. The bead-tank air heater he has contrived will completely eliminate excessive moisture in the bead tank. The effect of this economically built air heater in District 14 has been to assure a uniform flow of beads. Nash has passed along the drawings for the improvement. He simply built a metal box around the coil (see illustration).



The Role of the Highway Department

ATTACK and

B. H. Phillips, Senior Journalist
Travel and Information Division

For two years the Texas Highway Department has played an important supporting role in the simulated disaster conditions of Operation Alert—a practice exercise of Region 5, Office of Civil and Defense Mobilization. Texas, New Mexico, Arkansas, Louisiana, and Oklahoma are in Region 5. In case of disaster, the Texas plan calls for the State Highway Engineer to assume responsibility as the State Chief of Engineering Services. The available engineering forces in the state come under his jurisdiction—the State Highway Department, university and college and technical staffs, state and county engineering departments, utility organizations, contractors, engineering organizations.

Evaluation of the first performance, Operation Alert 1958, came about in March of this year when representatives of the Texas Highway Department, neighboring state highway departments, national and state officials of the Bureau of Public Roads, and representatives from Region 5's Office of Civil and Defense Mobilization met in Fort Worth.

In light of the preliminary reports from the various agencies on OPAL 1959 held last June, the evaluation of OPAL 1958 is still pertinent. Lack of standardization of signing, and lack of radiological monitoring equipment continue to be two big rocks in the highway departments' civil defense road.

Alfred L. Carr, Regional Utilities Engineer, Bureau of Public Roads, summed up Operation Alert 1958 as follows:

"By D+14 (Day the bombs dropped, plus 14 days) we had estimates of survival and capabilities and maps showing fallout patterns with intensities of radiation. Our major objective was to open up the main highways by rerouting and signing, and to regulate traffic to the extent possible.

"The actual performance of work was done by the State Highway Departments through their maintenance forces and by road and bridge contractors who were working for the State Highway Department. This . . . is our present highway industry team, and those who remained after the attack phase were quickly mobilized for this work."

Carr outlined what was accomplished: Non-critical construction work stopped. Other projects were assigned priorities. Major routes were re-established and rerouted. Availability and source of motor fuel was determined and reported to Civil Defense in Denton.

A Louisianian, H. R. Norckauer, Louisiana Department of Highways, discussing the participation of the Louisiana and Texas State Highway Department in the 1958 Exercise said,

"What we learned from the State

SURVIVAL

Department of Highways point of view in the 'OPAL 1958 Exercise' was that we are completely unprepared for this type of emergency, not only in knowledge of specific responsibilities but also there is a lack of simple materials such as signing material, plywood, petroleum, heavy steel members, pontoon-bridge equipment, Bailey bridges, and monitoring instruments. There are few stockpiles of heavy steel members and other materials which would be needed in an emergency, and very few places these materials would be procurable.

"Stockpiling of strategic materials is not altogether a local program. It should be a national one. State lines would be meaningless in a national emergency, and materials available in one state should be usable in an adjoining state if their need was greater. We should come up with some program for the stockpiling of strategic materials on a national basis.

"Other essentials in the highway departments are (that) a chain of command should be set up; priorities must be established. We must also know what we can do with contaminated areas; methods of decontamination of areas and equipment; what radiation tolerances men can work under, and radiation dose rates we can allow the public to be exposed to. We need to develop standard signs and a marking system for transportation on our highways. We need to have information concerning the establishing of transportation-checking points on all main highways and particularly on the Interstate routes. . . ."

Another Louisianian, Earl A. Landry, Assistant Chief Engineer, Louisiana Department of Highways, and Representative of AASHO Emergency Planning Committee, had this to say:

"One of the most pressing problems immediately after an attack will be to protect the survivors from radiation. Our ability to survive may well depend on the effectiveness of our transportation system, particularly our highways, and this is where our highway departments will be called to face the most difficult task we have ever encountered.

"I think it can safely be said that our fate as a nation will depend to a great extent on our ability to successfully and safely operate the undamaged portion of our highway system—that is, the part of our system that was not damaged or destroyed by the initial blast.

"Reconstruction will, of course, be necessary in some cases, but the most vital need will be the operation of what is left.

"Many of our people will be using the roads and we will certainly not be discharging our duty if we allow them to use highways that are contaminated to the extent that travel is dangerous. Our people will look to us for safe guidance, and it will be us they will blame if we do not provide this safety.

"The Civil Defense Agency and the Bureau of Public Roads are *planning* agencies—they do not possess the manpower and equipment to make the roads safe. We do have the proper organizations for this work.

"Two of the many things we must do and do quickly are: (1) We must have the necessary crews to monitor the roads for radioactivity; and (2) we must provide and erect the necessary warning and informational signs to safely direct traffic around unsafe areas.

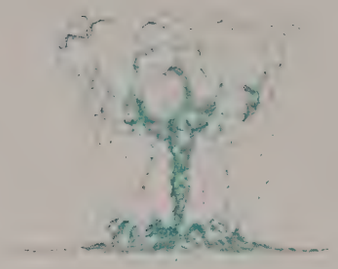
"Operation Alert of 1958 brought home the fact that fallout over a considerable portion of Louisiana made it necessary that the Highway Department make plans to develop a system of radiological monitoring. We maintenance engineers will be the ones who will send men into these areas to work, and certainly we owe it to these men to take the proper safeguards to protect them. Once these areas are located, it will be necessary to mark them with proper signs.

"Considerable thought has been given to the item of designing and adopting suitable standard signs for this work, but as yet this item remains unsolved.

". . . . it is very important that the answer to this problem be found as soon as possible so that the Highway Departments can fabricate and stockpile enough signs so that we will not be caught unprepared. I would like to urge all maintenance personnel . . . to give this matter serious thought and to do what you can to assist with this problem."

William Webster, from Biological and Radiological Defense Office of OCDM, Region 5, said that the following signs had been developed: Triangular signs marked "ATOMS," chemical warfare warning signs marked "CW," and biological warfare warnings marked "BW." Signs are of different colors, and on the reverse side have space for such information as dates, rates of intensity, etc.

Norman Towson, Emergency Planning Officer, BPR, Washington, D. C.,



stressed the difference in old and new emergency planning, and pointed out that, unfortunately, much of the planning had continued on the old basis.

"All movements are not necessarily related to evacuation of the population from target areas.

"The States' Operational Survival Plans started about three years ago when the State Civil Defense plans developed a broad area of planning. Some of the faults in this planning are: (1) The vision is too short-ranged (2) Gives too much attention to the matter of evacuation (3) Does not give adequate attention to the problem of fallout.

"The older planning dealt with emergency activities and organizations concerned primarily with evacuation of target areas and the aftermath use of atomic weapons having insignificant fallout. Much of the recent planning has continued on that basis, including most of the work involved in completing the States' Operational Survival Plans."

Part of the background of the new concept of emergency planning comes from a committee of the American Association of State Highway Officials serving in an advisory capacity to the Bureau of Public Roads. This committee was appointed in 1958.

Towson highlighted the new concepts: "These concepts are based on (1) potentially heavier attacks; (2) little or no warning time; and (3) general use of weapons with fireballs so large that weapons detonated thousands of feet high in the air still become surface bursts with the attendant fallout peril.

"These concepts envision that (1) anyone anywhere in the United States who survives blast and fire at target areas may be in an area where intensity of fallout makes protective measure mandatory for some time; (2) the principal theater of survival operations will be in zones of tolerable fallout intensities—zones which become progressively larger as radioactivity decays; (3) national integrity and national survival will depend upon our ingenuity and resourcefulness in exploiting every opportunity to expand operations as rapidly as expanding islands of survival or corridors of limited activities will permit; and (4) rehabilitation of target areas is not an immediate post-attack job—the fallout peril lingering for long periods makes questionable the extent to which effort and resources should be applied to rescue, fire-fighting, and debris clearance which were once considered major aspects of human survival."

Towson stated that in past years we paid a great deal of attention to blast and thermal effects within a certain area; but now we are talking about thermonuclear 20 to 40 megaton bombs covering areas of 25 miles from the center, which area will be totally destroyed, so that we cannot get into this area to do anything, as there will be total annihilation within this radius. We are now concerned with survival for a period of about two weeks, then concerned with how to get around the area, not into it; also we will be concerned mainly with the problem of fallout; but of course, these are just theories, and until there is an attack, we will really know very little about it. Since you cannot see, taste, or feel fallout, you cannot detect its presence except for the meters. It has been found an absorption of 400 roentgens would probably kill 50 per cent of the people exposed, and that humans have a tolerability of 200 roentgens per year (in any one year) and 400 for life.

". . . With a growing understanding of the fallout peril and the new direction it gives to emergency planning, the state highway departments in cooperation with the Bureau of Public Roads used the attack pattern of the national exercise Operation Alert for 1958 to evaluate the impact upon highway trausportation. We determined for several different post-attack periods the limits of unrestricted public highway travel using as a basis the fallout intensities as predicted by the civil defense fallout analysts. . . . As we did so, we realized that in a real emergency we will be making such determinations by monitoring," Towson continued.

"Areas of unrestricted travel were found to expand as radioactive decay progresses, gradually clearing the areas during the first 90 days following attack. However, even after 90 days, many important areas of the United States were found to remain unsafe for unrestricted public travel. Thus we learned what could happen to highway transportation on a national scale under one attack pattern and one set of meteorological conditions. At the same time we also learned what would happen to our organizations, our facilities, and our equipment. We also determined what major bridges would be lost by blast and fire, but found their loss not too important because they were in desolated areas where rehabilitation work would not be undertaken for a long time, perhaps not in our lifetimes," Towson said.

J. A. Shelby, Engineer of Field Maintenance, Texas Highway Department, outlined the Texas setup.

"All plans take full advantage of available engineering forces—as the State Highway Department, utility organizations, contractors, engineering organizations, state and county engineering departments, university and college technical staffs.

"These Engineering Services people will be responsible for all heavy-equipment operations. This includes maintenance and repair of highways, railways, airstrips, bridges, and structures. It also includes shoring and demolition of seriously damaged structures, debris clearance, and preparation of emergency cemetery sites, when requested to do so.

"The Highway Department has as-

sumed the responsibility for implementing the Civil Defense Engineering Services of this over-all State operational plan. The mission of the Engineering Section is to give direction to all engineering activities at state and local levels. This program provides for construction and repair of all essential material facilities in time of disaster. It is to support and maintain emergency services, and to provide for the restoration of community life to a level as near to normal as possible," Shelby said.

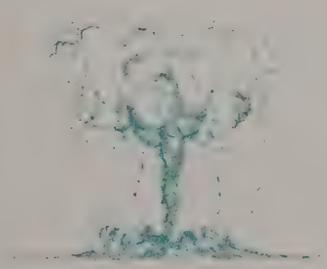
Utility operations will include supply, distribution, maintenance, and repair of electrical power lines, gas lines, liquid fuel and water lines, and sewage collection and disposal systems," Shelby said.

Supporting operations include assistance to other Civil Defense services, such as providing water for fire service, assisting health and medical welfare and other services, and maintaining evacuation routes by making emergency repairs and clearing debris.

The State Chief of Engineering Services, a position held by the State Highway Engineer, is responsible for over-all supervision and control through the chain of command of engineering services at all levels. The staff is organized for 24-hour capability. The staff organization includes a Deputy of Engineering Services, Liaison Officer, who is responsible for analyzing engineering needs of all Civil Defense Services of the state, and five Division Chiefs.

These five Chiefs are:

Chief of Structures Reconstruction Division, responsible for repair or demolition of buildings and bridges and other structures, inspection of structures for proper utilization and shelter determination and construction.



Chief of Engineering Transportation Facilities Reconstruction Division is responsible for clearance of debris and reconstruction of all highways, streets, roads, railroads, and airfield runways.

Chief of Public Utilities Reconstruction Division is responsible for repairing facilities and emergency construction, for furnishing electrical power and line communications, natural gas and fuel distribution.

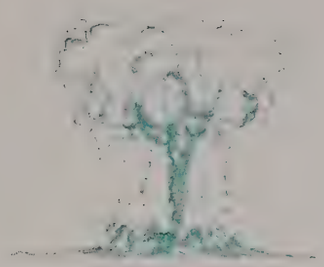
Chief of Water and Sanitation Facilities Reconstruction Division is responsible for collection, treatment, and distribution of all water systems and decontamination of same, and for the restoration and temporary construction of collection, treatment, and disposal systems for sewage.

Chief of Engineering Logistics Division is responsible for obtaining needed engineering personnel, construction equipment with operating personnel, and engineering material and supplies.

The State of Texas is divided into twelve Disaster Districts which parallel the Department of Public Safety Districts, plus five subdistricts. Serving as the Chief Engineer of each of the Disaster Districts for engineering services is the State Highway Department District Engineer. The Chief Engineer of each Disaster District has his staff organized in a manner similar to that followed in the State Engineering Services Headquarters Organization.

The Mission of the Disaster District Engineering organization is to lend support to the State Engineering Services Headquarters organization and to assist local field Disaster District sections or units that require and request engineering support. Also they will give engineering support to the metropolitan or county Civil Defense units when called upon for engineering assistance.

In matters of supplies and equipment, the Highway Department warehouses are designated supply centers for the engineering services. These warehouses are located at each Highway District headquarters and at most



county maintenance headquarters.

Engineering manpower, supplies, and equipment, insofar as possible, will be furnished from the normal source available to each section of the engineering services. If shortages of manpower, supplies, or equipment occur, the Chief of Engineering Logistics will be contacted. He will request assistance from the State manpower or supply services.

Shelby further stated, "We have a tabulation of material suppliers for the various construction materials, an inventory of heavy construction equipment and operating personnel. . . .

"Transportation for engineering manpower, materials, and equipment for each of the engineering services will be obtained from the sources normally available to each Division or Section of the Engineering Services.

"Inventories of available engineering and supervisory personnel and labor of the several classifications are tabulated by counties for ready reference in an emergency. Predetermined assembly points for personnel and construction equipment have been established in the proximity but at a safe operating position for each of the fifteen potential target areas of the state.

"One of the very important elements required in implementing the Engineering Services of the State Survival Plan is the Highway Department's short-wave radio network. Whenever possible, the Engineering Services will use such communication facilities as are normally employed in conducting peacetime activities of the Department. When such normal communication facilities are inadequate or inoperative during a civil-defense emergency, the State Emergency Communications Service will be contacted

for assistance."

The Texas Highway Department's radio network presently consists of 148 base stations and 1,000 mobile units operating in all 25 Highway Districts.

A plan is being developed for radiological defense. This plan will provide for the staffing, training, and equipping of the Highway Department's field forces to monitor the highway areas, buildings, and equipment in decontamination work. Until such a plan is placed in operation, dependence will be upon the radiological services of the State Health Service. Inauguration of a training program is pending the receipt of monitoring instruments which have been requested from OCDM through the State Civil Defense Office.

E. M. Arnold, Emergency Planning Engineer, outlined some of the duties of the Bureau of Public Roads:

". . . plans and programs for the most effective use of highways under three conditions . . .: (a) in preparation for attack conditions; (b) under attack conditions; (c) in post-attack conditions."

Working through the highway departments, the BPR is to maintain in operable condition the entire available highway network, and to expedite the movement of essential civilian and military traffic.

J. M. Page, Division Engineer, BPR, said, ". . . The most important factor in our planning activities should be our cooperation with the State Highway Department. Due to the very nature of our organization it is imperative that we have their full cooperation. Without it the Division level of the Bureau would actually become inoperative and cease to function.

". . . Our relationship with the State Highway Department is unique. It is based on full cooperation, mutual confidence and professional integrity. This relationship has functioned very effectively in the development of our highway system. We must continue this highly successful working relationship into the field of emergency planning. . . ."

Towson, Bureau of Public Roads Emergency Planning Officer from Washington, reiterated the importance of highways in time of national disaster.

"It is important that Public Roads and the State highway departments develop basic concepts of requirements in a recovery period following nuclear attack. Among mobilization planners there are those who foresee little economic activity, therefore little demand upon transportation, therefore few requirements to sustain transportation. This makes the planning problems easy, but it spells defeat for our nation.

"We know that there is a great demand for production and transportation merely to survive. Life cannot be sustained without tremendous output and distribution of products of all kinds. . . . If there is to be any recovery from the attack, sustained military effort and some lifting of the civilian economy to higher than minimum survival levels are fundamental.

"The vigor with which we waged World War II was dependent upon our capacity to produce and transport. . . . In the event of a large-scale nuclear attack, railroads will have insignificant operating capability until extensive restoration of damaged rail facilities has been accomplished. For many months, the nation's transport capabilities will be largely determined by the highway transport capability. The production capacity in turn will be geared to the transport capability.

"Following nuclear attack, the United States should have more motor vehicles per capita than prior to the attack, because usable vehicles can be recovered from areas where their owners do not survive. The extent to which those vehicles can be supplied with fuel, tires, and parts may well determine whether our nation survives, and at what rate recovery is possible.

"We must assume that mobilization planners, and the petroleum industry, will do their utmost to supply fuel at a rate which permits recovery. This will mean heavier truck traffic on many of our highways. It will mean recognition of the need for workers to commute over longer distances than they did in World War II to reach industries essential to the waging of war and to our survival. It will mean recognition of the need for greater mobility of our armed forces than in any previous war.

". . . It will be a function of the state highway departments and the Bureau of Public Roads in a future emergency to determine what replacement rate will result in the lowest drain upon our critical national resources when considering the total highway transport requirements, including both the highway and vehicle requirements. One problem in keeping roads in service in a post-attack situation will be the unusual traffic loads which will be placed at times on low-type roads which afford the safest route through or around contaminated areas."

Arnold made a vital concluding point: "With the knowledge we have of existing world conditions, preparedness to perform our responsibilities is something we dare not neglect, and although the Bureau and state highway departments have the largest construction program in history, we feel we must integrate emergency planning activities with the normal day-to-day activities of personnel . . . with as little disturbance in the routine activities as possible. We do not try to impress the organization that planning for survival or the performance of a wartime function is the most important phase of their activities, but it is important and must be included in their normal daily activities the same as any other assignment."

CEYLON ROAD BUILDING

Ceylon is but an occasional news item to most Americans. Recently when the small nation's prime minister was assassinated, Ceylon made front-page copy for the evening newspaper and was an item on newscasts. Many Americans would have to get out the map to locate the country exactly, and they would exclaim at discovering it is an island about the size of the state of West Virginia but 30 miles from India. Casually considered from the average American easy chair, Ceylon might distill vaguely into an oversimplification of jungles, temples, and tea. Naturally, it would be assumed that this British Commonwealth country is as different from Texas as chalk from cheese. Actually the two have a growing likeness.

So says Alfred J. Van Dyke, former Senior Resident Engineer in the Fort Worth District, who resigned in 1952 after 22 years with the Texas Highway Department and has for two years now been directing not only highway development but all other transportation projects in Ceylon. In a recent letter posted from Colombo, largest city and the capital of Ceylon, Van Dyke, Chief of the Transportation Projects for the United States Operations Mission, says, ". . . we have, in fact, a miniature Texas Highway Department here in Ceylon."

Van Dyke has carried the influence of Texas highway engineering a long way. To date, in the years of his work abroad, the former District Engineer has visited 91 countries. His first position after leaving the Highway Department was in Peru as a highway advisor to that country's President and Minister of Public Works. "After a year, when the job with that South American country was completed," Van Dyke relates, "I took a similar one with the Government of Italy and spent six months in Rome and six months in Italian Somaliland on the east coast of Africa, making a highway economic survey in connection with a $12-million program proposed there by the United Nations. After that job, I went with the International Cooperation Administration as highway engineer, with headquarters in Washington. For three years I traveled about 85 per cent of the time and visited all highway projects of any type over the world in which the United States Government was interested. Two years ago a new position was created in Ceylon which I asked for and received. I have now been here two years, serving as chief of the transportation projects."

Newly independent Ceylon has sought, and is receiving, technical advice and material assistance from the United States. Improved transportation is one of this foreign country's essential needs. Van Dyke described highway construction he directs as "primarily a training project for engineers, operators, and mechanics, and the road itself is more or less a by-

The pilot road project pictured here will be the model for future highway construction through the jungles in Ceylon. Alfred J. Van Dyke, formerly with the Texas Highway Department, is directing work on this and other transportation projects of the International Cooperation Administration in that island country.

Van Dyke, right, Chief of the Transportation Projects for the United States Operations Mission, visits Ceylonese field party on the highway.

product." The Ceylonese are exceedingly proud of the 22 miles of connection which will cut "the aching journey between Batticaloa and Colombo by something like 70 miles." Journalists of the country, making trips to the job, have written long accounts of the work, which they maintain "will be the finest stretch of roadway in the whole island and one which conforms to international highway standards." In his recent letter Van Dyke says, "The work we are doing here is about the level of Texas' higher type farm to market roads."

The construction on this road in a country across the globe becomes real, and one can realize it is a much-admired achievement by reading the articles written for the English newspapers by reporters who make the trip out to the jungle to see. This account, which appeared in the *Times of Ceylon,* pictures the work site: "The Dry Zone has all the natural qualities to make the project a tough task for the men working on it. The weather is anything but conducive to hard work. The heat is unbearable, but it must rise a couple of degrees more to make one's blood boil. The terrain is rocky in places, making it necessary for gangs of men to break up the ground, square foot by square foot. Progress is painfully slow on these rocky patches.

"The men on the project are a fine, sturdy lot. They work hard from 6 in the morning till 1:30 in the afternoon, then retire to their homes to avoid the heat which beats down on the land. In the evenings there is always something to do. The quarters have lights, running water, even flush bowls. And U. S. I. S. has shipped out a projector and films with vernacular commentaries. On Mondays and Thursdays the men gather round to watch the films.

"The actual road will be 30 feet wide with a total of eighteen feet of pavement on both sides. The first task is to cut a 'line' through an entire length of the new road. At most the line is barely two feet wide and has to be cut by men using hatchets. At regular intervals along this line painted flagpoles are placed to guide the machines that take over the job from there on.

"We watched a superbly coordinated operation of earthmoving from a huge mound which lay exactly in the path of the new road. An excavator moved a full circle digging up nearly 3,000 pounds of earth each time. As it picked up the earth and swung around, there was a tipper van waiting to take the load away. Every two minutes the vans returned and awaited their turn to load up and move out. It was a smooth operation with no slip-up, but what was most astounding was the fact that the man operating the excavator had been shown the ropes only two weeks before. He sure had caught on fast."

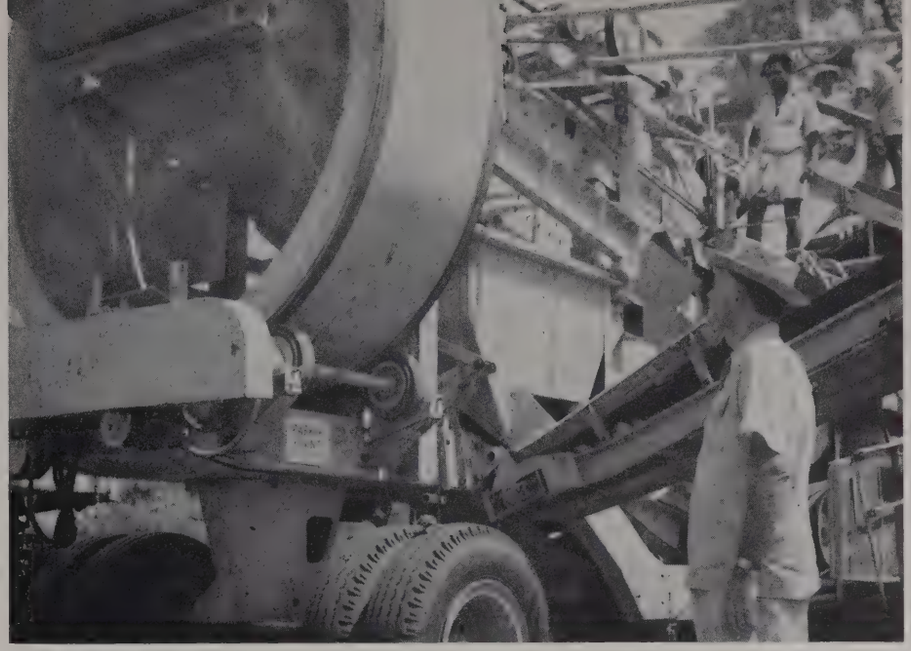
Another item from the *Ceylon Observer:* "Into the road is going the sweat and throat-stopping labour of the men of the Public Works Department [Ceylon]. Their efforts are guided and directed at every turn by technical personnel of U. S. Overseas Mission, who handed their country's gift of a million dollars of equipment to the Ceylon Government for use on this project."

Van Dyke mentions in his letter that two other Texans work with him on highway projects in Ceylon. One is a former Highway Department employee, "John Bryan of Granbury,

The International Cooperation Administration supplied these vehicles for Ceylon's Public Works Department. The Ceylon Public Works Department is spending 4½ million rupees in the building of the project road which will be surfaced with rock and asphalt.

who was stationed in Jacksboro for twelve years, working as Resident Designer." Bryan is design engineer. The other Texan is Tom Boyd of Cleburne, formerly with John Buckner and Brown and Root. He is highway construction advisor in Ceylon.

During the summer Van Dyke returned to the States on leave and visited the Highway Department for two weeks of his time in this country. His leave was noted by the International Cooperation Administration in a press release forwarded from Washington. This told of the threefold supervision for which the American engineer is responsible in the tropical island. It said, in part: "The railway project supervised by Mr. Van Dyke will increase the number of daily commuters in the capital city of Colombo from 30,000 to approximately 90,000, allowing people now living in slum conditions near their jobs to move out into open and healthier countryside. Specifications were developed and purchase arranged for 30 diesel-powered coaches financed by grants and loans from the United States; the Government of Ceylon with its own funds bought an additional fifteen.



Here Van Dyke watches Ceylonese workmen, who a few months earlier were just villagers, take over an English crusher.

"The highway development project assists the Public Works Department create within their own organization a group of engineers, operators, foremen, and mechanics able to design, construct, and maintain a modern highway system for Ceylon. As demonstration training, a section of highway has been located in a remote, virgin-jungle area. With the cooperation and assistance of seven American engineers, the Public Works Department is designing and constructing 22 miles of road, using the latest in technique, machinery, and materials. While relatively short in length, this stretch of 'training ground' will actually cut the distance from Batticaloa, a principal town on the East Coast, to Colombo on the West Coast by some 70 miles.

"In the field of air transportation, the United States is cooperating with the Civil Aviation Department of Ceylon in planning and constructing an air facility capable of handling jet traffic in and out of the Island, a focal point for travel in this part of the world. A U. S. loan has been requested for the construction of the field to include an extension of the existing runway at Negombo, a short distance from Colombo, taxiways, parking aprons, access road and a new terminal building."

In this picture Van Dyke (pointing at right) joins Tom Boyd (in dark glasses) and Ceylonese radio technician at a construction site. Already little houses not there before the road began are appearing, the Ceylonese newspapers report.

The months of September and October, Van Dyke's letter said, he would spend in Afghanistan "to assist in establishing a highway group there to care for the construction of some 400 miles of roads." That his interest in yet another foreign country had not diminished was evidenced by this additional comment, "Afghanistan will be the ninety-first country or colony I have visited. Never having been there, I am glad to have the assignment."

That Mud Flap Problem

"We have received information from the Department of Public Safety that dump trucks are not exempt under this law." That sentence, as well as this one: "We invite any and all suggestions that you may have regarding a workable solution for our problem," was contained in an administrative circular from the State Highway Engineer which set District maintenance and equipment men "flapping."

There had been hope by these men in the field that the House Bill passed by the Legislature last spring and requiring continuous use of safety guards on rear wheels of specified work vehicles owned by the State did not apply to dump trucks. As these men who have to make the repairs know, the usual mud flap mounted on a short wheel base truck is doomed the first time the driver backs his machine into a stockpile. Using ordinary mud flaps to meet the new law's requirements, a number of districts had experienced budget hardships. Keeping dump trucks outfitted in compliance with the law was expensive for all. To be acceptable, then, any new flap contrived should be practicable, durable, and—most important—economically within every budget.

Dump-truck flaps became the object of experimentation throughout the Highway Department Districts, and a gratifying number of responses to State Highway Engineer D. C. Greer's appeal were received by Equipment and Procurement Division in Austin. The solution offered by Yoakum District met the specifications most completely, it was decided. In the words of John Nations, Director, Equipment and Procurement Division: "Yoakum has offered a practical, simple, and inexpensive retractable [flap] which will work in all phases of dumping and stock piling."

The idea for raising the flap during a dumping operation was conceived by W. C. Hunter, retired Maintenance Foreman from La Grange. Credit for developing the idea goes to Max Templin, Senior Maintenance Foreman in Jackson County. Here's what Earl F. Wyatt, District Maintenance Engineer, says about the new system: "[It] is a simple arrangement of two pulleys and a three-sixteenths-inch flexible steel cable. One end of

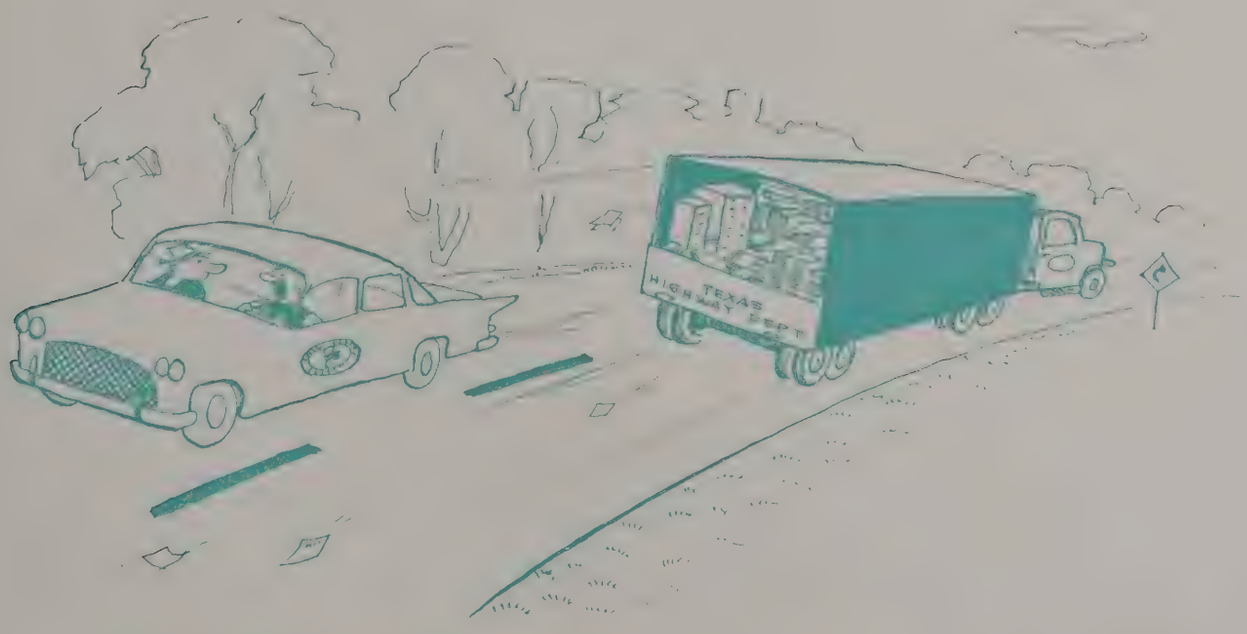
Dump bed lowered; mud flap in normal hauling position.

Dump bed half raised.

Dump bed fully raised and mud flap in fully retracted position.

the cable is fastened to the truck frame and the other to a piece of light-angle iron bolted to the flap. As the truck bed is raised, the flap is pulled up out of the way. As the bed is lowered, the flap falls back into the normal position." The original installation was made by Eugene Barton, Semi-Skilled Laborer at the Edna Maintenance Warehouse.

The picture sequence here shows the mud flaps in all positions. Maintenance Engineer Wyatt calls attention to the fact that the flaps should be mounted not in their customary position but back about eight or ten inches to the extreme end of the dump bed so when the flaps are fully retracted and the dump bed fully raised the flaps will clear the wheels. Front and back across the top width of the flaps, one-inch strap iron strips are bradded together. Holes are then punched to accommodate a choice of fasteners which will attach the flap to the truck body. (Some Districts use short lengths of five-sixteenths-inch chain for this, in order to regulate the length of the flaps and bring them to within eight inches of the ground to meet regulations.) The chains are cut the desired length and hooked into cold-shuts which have been welded onto the bottom end of the dump body. These cold-shuts permit easy removal in those cases where the flaps may interfere with attachment of certain types of spreader boxes.



"THERE GOES ANOTHER RIGHT-OF-WAY PROJECT TO AUSTIN."

Laboratory Engineers Conference

The new District 15 headquarters in San Antonio was the site of the fourth annual meeting of district laboratory and engineering personnel October 13 and 14. Laboratory engineers and supervisory personnel from each district attended the meeting, along with representatives from A & M College and the Bureau of Public Roads, making an attendance record of around 75 persons.

Johnny Dominey from Lufkin District registers for the Laboratory Engineers Conference. Waiting to sign up are Frank Gallaway, District 11; R. L. Rothe, District 11; Travis Alexander, D-8; and Bob Schleider, D-6. Pretty registrar is Mrs. Ruth B. Alford, Laboratory Secretary, District 15.

Looking over the new District Laboratory before the opening session are, left to right: Charles Campbell, B. R. Hunter, unidentified gentleman, N. A. Billingsley Jr., Ed H. Chance, Bob Schleider, Justin Bingham, Gene Farley, H. E. Lawson, Frank Rife, Travis Alexander, and Walter Plumlee.

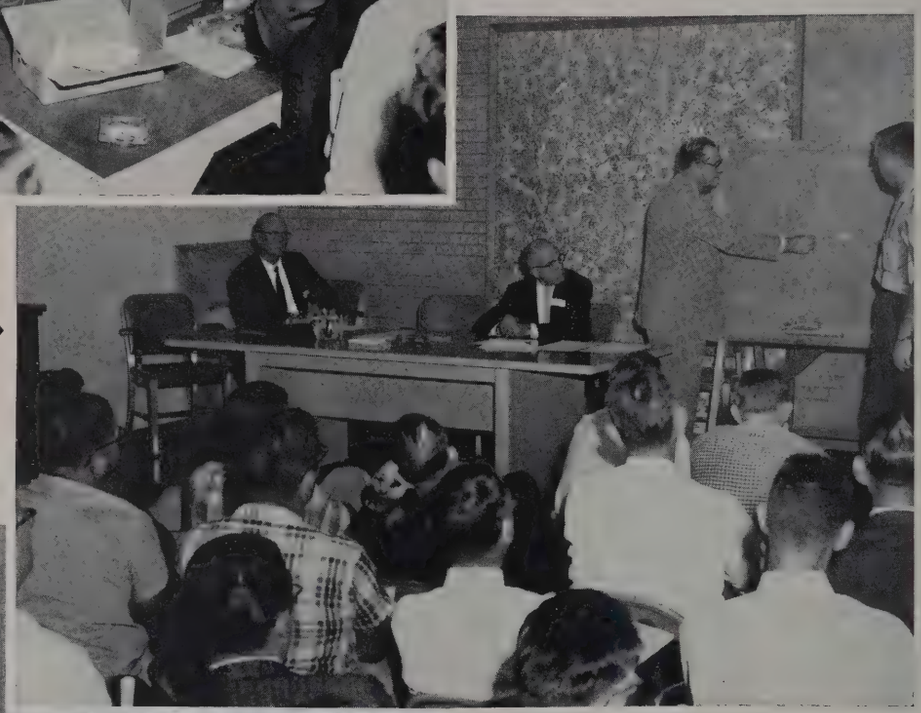
Deep in discussion at this coffee conference are J. E. Hunt of D-9 and W. P. Privette, of the Bureau of Public Roads. Ralph Rich, of the BPR, and Eugene Clay of El Paso look on.

Chester McDowell, Supervising Soils Engineer, and J. E. Hunt, Senior Soils Engineer, of D-9, demonstrate the use of the cohesiometer.

Robert Long, Laboratory Engineer from Bryan, and Johnny Dominey, Laboratory Engineer from Lufkin, visit during a break. R. L. Rothe, District 11 Construction Engineer, and B. R. Russell, District 23 Design Engineer, read intently during the break.

The audience pays close attention to the words of the speaker at the Conference.

J. E. Hunt gives a few points on the use of the pressure pycnometer as E. B. Ward from the Houston Expressway Lab looks over the cohesiometer.



Chester McDowell draws line of equal swell for compacted material as J. E. Kelly of Waco District stands by. Materials and Tests Engineer A. W. Eatman and Charles Baxter, acting as host for District 15, look on from the conference table. »

« *Dr. Curtis L. Godfrey, Associate Professor of Agronomy at A & M College, speaks to the conference. Chester McDowell and Charles Baxter listen from the conference table.*

The afternoon session of the conference is about to get underway as the audience gathers.

OVER THE HIGHWAYS

Comments . . . from the Traveling Public

• We liked everything. Texas is as big as the Texas brag is. It has everything—mountains, plains, lakes, ocean, and all kinds of animals, beautiful cattle and horses—well, there isn't anything Texas doesn't have.

Mrs. L. F. Ainsworth
Jacksonville, Florida

• On October 19 we three women from Kansas were driving through Texas on our vacation when we experienced some car trouble a few miles out of Greenville, Texas.

While we were standing beside the highway trying to analyze our trouble, two of your Texas Highway Department trucks stopped to offer their assistance. Although their help was entirely unsolicited, we did so appreciate their courtesy in stopping to help us and finally bring us into Greenville, Texas, to a garage. We failed to get their names, but the license numbers of the trucks were XH-312 and XH-1630.

We just wanted to pass on our word of thanks and praise to the Texas Highway Department and to the men who so kindly lent us a helping hand. If you know the men driving these trucks, we would appreciate your extending our thanks to them personally.

Miss Bernice Danielson
Miss Louise Hagadorn
Miss Eleanor Ahlstedt

• Our visit was fine while in Texas. The highways were marked very plainly and they were very nice to drive on. Thanks.

Tulsa, Oklahoma

• We disliked the dogmatic restriction of speed on "open" highways with little traffic, though 60 is our normal speed except in passing.

Molton, Florida

• Highway expressway speeds should be increased to 65-70 by day for better traffic.

Edward F. Smith
Kansas City, Missouri

• We disliked the low speed limits on dual-lane highways.

Mount Prospect, Illinois

• Your speed limit is too slow for the good highways that you have.

Topeka, Kansas

• Native Texans exceeding your speed limits bears watching!

Chicago, Illinois

• We liked the courtesy, information, and maps received at the information station.

Mr. and Mrs. Lynn Nichols
Greenville, Illinois

• The attendant at the information bureau was very courteous and was accurate in the needed information, even to smallest details.

McAlester, Oklahoma

• We like your changing topography and the general helpfulness of the folks.

Mrs. and Mrs. W. Davis
Brooklyn, New York

• Time now presents itself for Sheriff T. L. Hopkins and this writer, on behalf of the citizens of this county, to express our sincere appreciation for the splendid work of the men of your department incident to the tragic collision of a school bus and truck in this county on September 29 in which eight persons lost their lives and 22 persons were injured.

Personnel of the Cooper unit immediately answered the call of local officers. The high caliber of these men and their excellent training was apparent to all at the scene of this catastrophe.

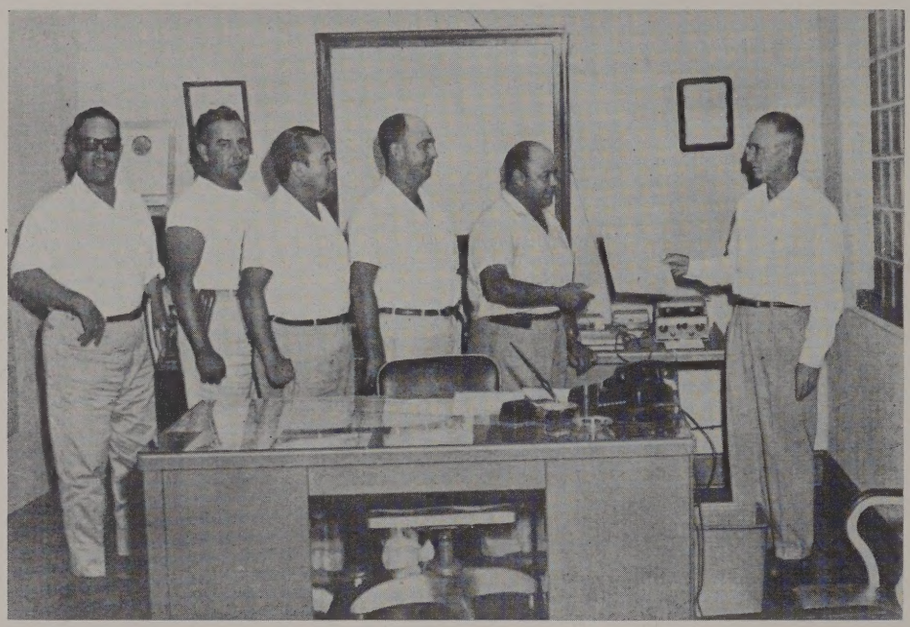
In particular, we would mention the fine work of L. A. McCormack, state maintenance foreman (Senior Maintenance Foreman, Cooper), and K. R. Allen (Patrolman), Casto Strickland (Semi-Skilled Laborer), Jack Owen (Semi-Skilled Laborer) and Clarence Carter, all personnel of your local facility.

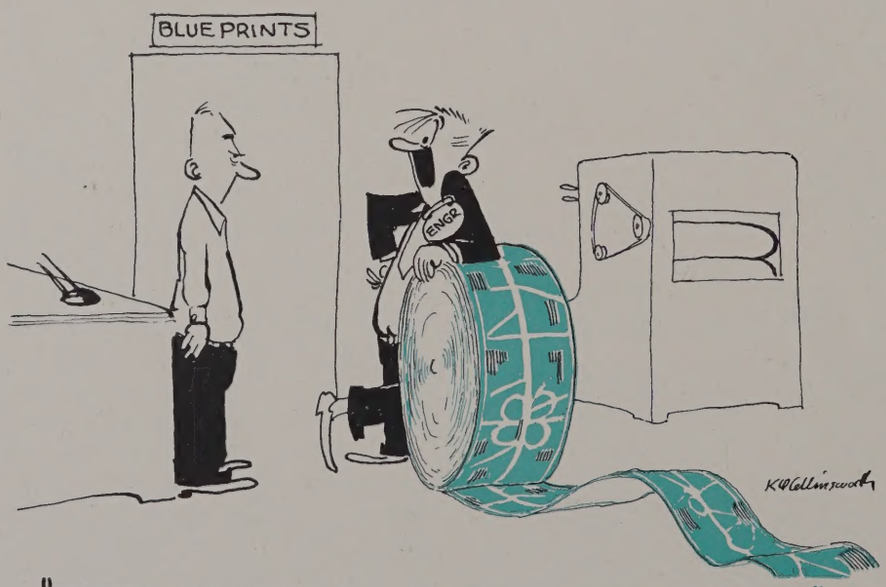
You have a splendid group of men here. They not only serve efficiently and well the people of this county, but their citizenship is of inestimable value. We are indebted to you for these fine men and the service they render.

Cameron McKinney,
County Attorney
Delta County

To and From Our Readers

When District Engineer Jimmy Snyder, Pharr, had visitors from Guatemala in his district, he did not think to take a picture of them. Later, after they were gone, he remembered. So he posed with a map of District 21 and had his picture taken. Later, when the men came back to headquarters, they were lined up in the proper position, and their picture was taken. The two pictures were combined, and this is the result.





"GUESS WHAT I DID... I LEFT OFF THE TITLE."

About Our Pictures . . .

In lieu of a Christmas cover, we offer you a view of the Stemmons Expressway in Dallas. On December 4, 5, and 6, the opening ceremonies will be held, bringing Texas an expressway as wide as any in the country. It equals the Hollywood Freeway, but Stemmons was built sixteen-lane to begin with, and the Hollywood Freeway was added onto. The actual expressway is ten lanes, with three-lane frontage roads along each side.

On the cover, we look along Interstate 35E South toward the Dallas skyline. At the curve of Interstate 35E is the beginning of the Stemmons Expressway.

Inside the front cover, we look along the Stemmons Expressway, curving into the picture from the left. Crossing it is the Houston Street Viaduct. Top left is the Toll Road.

TEXAS HIGHWAY COMMISSION

HERBERT C. PETRY JR.	Chairman
CHARLES F. HAWN	Member
HAL WOODWARD	Member
D. C. GREER	State Highway Engineer

Texas Highways

TEXAS HIGHWAYS, official journal of the Texas Highway Department, is published in the interest of highway development in Texas and for departmental education in the improvement of construction, maintenance, and operation.

TEXAS HIGHWAYS is available to the general public on a subscription basis at $3.50 annually, or it can be purchased for 35 cents a copy. Subscriptions, inquiries, material, or manuscripts should be directed to the Editorial Office, Travel and Information Division, Texas Highway Department, Austin 14, Texas.

ROAD CONDITION REPORTERS

DISTRICT 1—PARIS
Reporter: Joe M. McDowell
Business Phone: SUnset 4-4311
Residence Phone: SUnset 5-2693
Alternate: William M. Heath
Business Phone: SUnset 4-4311
Residence Phone: SUnset 4-3862

DISTRICT 2—FORT WORTH
Reporter: J. R. Stone
Business Phone: WA 6-1711
Residence Phone: WA 3-4350
Reporter: Billie E. Davis
Business Phone: WA 6-1711
Residence Phone: CR 5-1995
Alternate: James W. Tobey
Business Phone: WA 6-1711
Residence Phone: WA 3-0842
Alternate: Jasper M. Rexroat
Business Phone: WA 6-1711
Residence Phone: WA 7-0361

DISTRICT 3—WICHITA FALLS
Reporter: Frank L. Ragland
Business Phone: 767-1441
Residence Phone: 692-3779
Alternate: O. W. Garrett
Business Phone: 767-1441
Residence Phone: 767-3509

DISTRICT 4—AMARILLO
Reporter: J. M. Harris
Business Phone: DR 6-8238
Residence Phone: DR 2-2181
Reporter: W. A. Riney
Business Phone: DR 6-8238
Residence Phone: FL 6-8024
Alternate: R. C. Liles
Business Phone: DR 6-8238
Residence Phone: DR 2-9295
Alternate: V. J. McGee
Business Phone: DR 6-8238
Residence Phone: FL 6-3392
Alternate: Charles W. Smith
Business Phone: DR 6-8238
Residence Phone: DR 2-5673

DISTRICT 5—LUBBOCK
Reporter: Joel Willson
Business Phone: SH 4-8411
Residence Phone: SH 4-5169
Alternate: R. W. Tucker
Business Phone: SH 4-8411
Residence Phone: SH 4-0035

DISTRICT 6—PECOS
Reporter: Harry S. Wallace
Business Phone: FE 2-0501
Residence Phone: EM 6-7317
Alternate: Bertram N. Peeples
Business Phone: FE 2-0501
Residence Phone: FE 7-8426

DISTRICT 7—SAN ANGELO
Reporter: R. N. Jennings
Business Phone: 21436
Residence Phone: 5388
Alternate: H. V. Briley
Business Phone: 21436
Residence Phone: 221194
Alternate: R. W. Howard
Business Phone: 21436
Residence Phone: None

DISTRICT 8—ABILENE
Reporter: Cecil A. Conklin
Business Phone: OR 3-3761
Residence Phone: OW 2-3910
Alternate: George M. Williams
Business Phone: OR 2-3246
Residence Phone: OR 3-1529

DISTRICT 9—WACO
Reporter: James E. Kelly
Business Phone: PL 3-4561
Residence Phone: PL 4-1252
Alternate: C. D. Handley Jr.
Business Phone: PL 3-4561
Residence Phone: PL 4-0260

DISTRICT 10—TYLER
Reporter: I. H. Crutcher Jr.
Business Phone: LYric 2-7327
Residence Phone: LYric 3-3554
Alternate: F. G. Rankin
Business Phone: LYric 2-7327
Residence Phone: LYric 3-3210

DISTRICT 11—LUFKIN
Reporter: J. M. York
Business Phone: NE 4-4433
Residence Phone: NE 4-6389
Alternate: C. T. Currie
Business Phone: NE 4-4433
Residence Phone: NE 4-3996

DISTRICT 12—HOUSTON
Reporter: J. H. Doss
Business Phone: UN 9-4571
Residence Phone: UN 4-1027
Alternate: Fred B. Wilson
Business Phone: UN 9-4571
Residence Phone: HI 4-7424

DISTRICT 13—YOAKUM
Reporter: Earl Wyatt
Business Phone: AX 3-3535
Residence Phone: AX 3-3517
Alternate: Vernon Matusek
Business Phone: AX 3-3535
Residence Phone: AX 3-4853

DISTRICT 14—AUSTIN
Reporter: Damon D. Naumann
Business Phone: HO 5-7617
Residence Phone: GL 2-1112
Alternate: John L. Wilder
Business Phone: HO 5-7617
Residence Phone: GL 3-0196
Alternate: R. F. Wallendorf
Business Phone: HO 5-7617
Residence Phone: HI 2-2483
Alternate: Joe A. Russell
Business Phone: HO 5-7617
Residence Phone: HO 5-8381

DISTRICT 15—SAN ANTONIO
Reporter: Bertin E. Leveque
Business Phone: DI 4-2331
Residence Phone: PE 5-0030
Alternate: Riley W. Stowe
Business Phone: DI 4-2331
Residence Phone: LE 3-0042

DISTRICT 16—CORPUS CHRISTI
Reporter: E. M. Ruth
Business Phone: TU 2-1901
Residence Phone: TE 5-5735
Alternate: Herman Schneeman Jr.
Business Phone: TU 2-1901
Residence Phone: TE 5-5965

DISTRICT 17—BRYAN
Reporter: Joe G. Hanover
Business Phone: TA 2-0151
Residence Phone: TA 2-5639
Alternate: W. R. Brown
Business Phone: TA 2-0151
Residence Phone: TA 3-6771
Alternate: J. O. Sloan
Business Phone: TA 2-0151
Residence Phone: TA 2-6436

DISTRICT 18—DALLAS
Reporter: Grover Green
Business Phone: DAvis 1-6421
Residence Phone: TAylor 3-2689
Alternate: William B. Purcell
Business Phone: DAvis 1-6421
Residence Phone: CHerry 9-7414
Alternate: Leon G. Harris
Business Phone: DAvis 1-6421
Residence Phone: EVergreen 1-1894

DISTRICT 19—ATLANTA
Reporter: B. L. Frank
Business Phone: SW 6-2851
Residence Phone: SW 6-2585
Alternate: Roy Johnston
Business Phone: SW 6-2851
Residence Phone: SW 6-3350

DISTRICT 20—BEAUMONT
Reporter: Milton G. Hayes
Business Phone: TE 2-1691
Residence Phone: TE 3-7393
Reporter: Joe P. Fuller
Business Phone: TE 2-1691
Residence Phone TU 3-4691
Reporter: John De Lacie
Business Phone: TE 2-1691
Residence Phone: TE 3-7113
Reporter: C. H. Brown
Business Phone: TE 2-1691
Residence Phone: TW 2-5486

DISTRICT 21—PHARR
Reporter: Tracey Haliburton
Business Phone: STerling 7-2771
Residence Phone: STterling 7-2769
Alternate: Clyde Salter
Business Phone: STerling 7-2771
Residence Phone: STterling 7-3346

DISTRICT 22—DEL RIO
Reporter: Edward L. Sanders Jr.
Business Phone: PRospect 5-2451
Residence Phone: PRospect 5-5042
Alternate: Jesse P. Beckett Sr.
Business Phone: PRospect 5-2451
Residence Phone: PRospect 5-5322

DISTRICT 23—BROWNWOOD
Reporter: W. T. Moore
Business Phone: MI 3-4391
Residence Phone: MI 2-9729
Alternate: C. A. Thomas
Business Phone: MI 3-4391
Residence Phone: MI 3-2327

DISTRICT 24—EL PASO
Reporter: Leroy J. Wallen
Business Phone: PR 2-1449
Residence Phone: UL 9-9488
Alternate: L. B. Harrison Sr.
Business Phone: PR 2-1449
Residence Phone: PR 2-4873
Alternate: Max W. Moore
Business Phone: PR 2-1449
Residence Phone: LO 5-4589

DISTRICT 25—CHILDRESS
Reporter: Palmer Massey
Business Phone: WE 7-2571
Residence Phone: WE 7-2954
Alternate: J. R. Long
Business Phone: WE 7-2571
Residence Phone: WE 7-3963